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Table A. Distance least-squares optimized atomic coordinates for Hypothetical Polymorph C [space group Bmmm (No. 65)  $a = 13.39 \text{ \AA}$ ,  $b = 12.73 \text{ \AA}$ ,  $c = 21.33 \text{ \AA}$ ,  $R = 0.001$ ].

		x	y	z
1	Si1	0.11634	0.37703	0.07137
2	Si2	0.19939	0.19333	0.14961
3	Si3	0.11554	0.12123	0.27628
4	Si4	0.11093	0.00000	0.07583
5	O1	0.17096	0.10406	0.09833
6	O2	0.10165	0.00000	0.00000
7	O3	0.00000	0.00000	0.10653
8	O4	0.14731	0.50000	0.07594
9	O5	0.00000	0.36332	0.09104
10	O6	0.18591	0.30877	0.11849
11	O7	0.13217	0.33607	0.00000
12	O8	0.12621	0.18250	0.20990
13	O9	0.31445	0.17789	0.17163
14	O10	0.00000	0.12461	0.29914
15	O11	0.15040	0.00000	0.26772

Table B. Distance least-squares optimized atomic coordinates for Hypothetical Polymorph D [space group Bmmm (No. 65)  $a=12.69$  Å,  $b=10.43$  Å,  $c=21.19$  Å,  $R=0.001$ ].

		x	y	z
1	Si1	0.12809	0.50000	0.07431
2	Si2	0.18757	0.24474	0.15339
3	Si3	0.11272	0.14805	0.27349
4	Si4	0.12710	0.00000	0.07220
5	O5	0.17572	0.12649	0.10425
6	O6	0.16799	0.00000	0.00000
7	O7	0.00000	0.50000	0.07913
8	O8	0.17232	0.62553	0.11231
9	O9	0.16121	0.50000	0.00000
10	O10	0.09792	0.22423	0.20699
11	O11	0.30333	0.23057	0.18501
12	O12	0.00000	0.14771	0.31026
13	O13	0.14962	0.00000	0.26315
14	O14	0.00000	0.00000	0.07490

Table C. Distance least-squares optimized atomic coordinates for Hypothetical Polymorph E [space group I mmm (No. 71)  $a = 13.06 \text{ \AA}$ ,  $b = 10.49 \text{ \AA}$ ,  $c = 21.19 \text{ \AA}$ ,  $R = 0.001$ ].

		x	y	z
1	Si1	0.12252	0.50000	0.06766
2	Si2	0.19040	0.25128	0.14887
3	Si3	0.11795	0.14919	0.27989
4	Si4	0.12072	0.00000	0.07653
5	O5	0.17880	0.12574	0.10434
6	O6	0.13075	0.00000	0.00000
7	O7	0.00000	0.50000	0.05401
8	O8	0.14887	0.62609	0.10943
9	O9	0.18150	0.50000	0.00000
10	O10	0.12505	0.22515	0.21296
11	O11	0.30850	0.27957	0.16900
12	O12	0.00000	0.15564	0.30472
13	O13	0.15008	0.00000	0.27172
14	O14	0.00000	0.00000	0.09555

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Table D. Distance least-squares optimized atomic coordinates for Hypothetical Polymorph F [space group B mmm (No. 71)  $a=13.37$  Å,  $b=7.80$  Å,  $c=21.17$  Å,  $R=0.001$ ].

		x	y	z
1	Si1	0.12106	0.00000	0.07365
2	Si2	0.22239	0.31184	0.15077
3	Si3	0.12011	0.20112	0.27558
4	O4	0.00000	0.00000	0.07828
5	O5	0.16487	0.17006	0.10807
6	O6	0.15464	0.00000	0.00000
7	O7	0.17411	0.31480	0.22112
8	O8	0.21078	0.50000	0.11874
9	O9	0.34010	0.26236	0.15556
10	O10	0.00000	0.22795	0.27159
11	O11	0.14678	0.00000	0.26522

Table E. Distance least-squares optimized atomic coordinates for Hypothetical Polymorph G [space group I mma (No. 74)  $a= 13.05 \text{ \AA}$ ,  $b= 10.50 \text{ \AA}$ ,  $c= 21.26 \text{ \AA}$ ,  $R=0.001$ ].

		x	y	z
1	Si1	0.12387	0.25000	0.08561
2	Si2	0.12385	0.25000	0.93727
3	Si3	0.19291	0.98433	0.14948
4	Si4	0.11706	0.89533	0.27920
5	O5	0.15375	0.25000	0.01144
6	O6	0.17063	0.37617	0.11943
7	O7	0.00000	0.25000	0.09288
8	O8	0.00000	0.25000	0.93004
9	O9	0.17036	0.37603	0.90329
10	O10	0.31154	0.97514	0.17222
11	O11	0.11947	0.96161	0.21017
12	O12	0.00000	0.89362	0.30513
13	O13	0.15892	0.75000	0.27397

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Table F. Distance least-squares optimized atomic coordinates for Hypothetical Polymorph H [space group B mmb (No. 63)  $a = 12.87 \text{ \AA}$ ,  $b = 9.87 \text{ \AA}$ ,  $c = 17.56 \text{ \AA}$ ,  $R = 0.001$ ].

		x	y	z
1	Si1	0.11310	0.25000	0.12923
2	Si2	0.11372	0.25000	0.94555
3	Si3	0.22538	0.96493	0.15239
4	Si4	0.11957	0.88947	0.30336
5	O5	0.09944	0.25000	0.03744
6	O6	0.17554	0.38423	0.15588
7	O7	0.00000	0.25000	0.16983
8	O8	0.00000	0.25000	0.90557
9	O9	0.17813	0.38406	0.92014
10	O10	0.35032	0.98049	0.14439
11	O11	0.19648	0.88425	0.23004
12	O12	0.00000	0.90348	0.27503
13	O13	0.13253	0.75000	0.35171

Table G. Distance least-squares optimized atomic coordinates for Hypothetical Structure built based on the projections along [1 0 0] of polymorph A of zeolite beta and the projection along [1 0 0] of polymorph C of zeolite beta. [space group Pmma (No. 51)  $a= 23.69 \text{ \AA}$ ,  $b= 13.90 \text{ \AA}$ ,  $c= 12.71 \text{ \AA}$ ,  $R=0.001$ ].

		x	y	z
1	Si1	0.18566	0.39071	0.95613
2	Si2	0.18559	0.39081	0.70294
3	Si3	0.13351	0.20220	0.02725
4	Si4	0.13386	0.20139	0.63861
5	Si5	0.25000	0.11598	0.72209
6	Si6	0.25000	0.11598	0.95211
7	Si7	0.06628	0.11140	0.83181
8	Si8	0.06232	0.11475	0.45657
9	Si9	0.06622	0.10985	0.21090
10	O10	0.14221	0.31733	0.01361
11	O11	0.17802	0.38283	0.82954
12	O12	0.17243	0.50000	0.99368
13	O13	0.25000	0.36274	-0.01235
14	O14	0.14233	0.31708	0.64551
15	O15	0.25000	0.36340	0.67133
16	O16	0.17203	0.50000	0.66545
17	O17	0.09115	0.16297	0.93657
18	O18	0.19407	0.14850	0.01667
19	O19	0.10670	0.18006	0.14224
20	O20	0.08937	0.16704	0.72814
21	O21	0.19407	0.14848	0.65753
22	O22	0.10972	0.17304	0.52319
23	O23	0.25000	0.00000	0.73629
24	O24	0.25000	0.16678	0.83710
25	O25	0.25000	0.00000	0.93792
26	O26	0.08669	0.00000	0.82861
27	O27	-0.00218	0.11568	0.83397
28	O28	0.07253	0.00000	0.46995
29	O29	0.06707	0.14358	0.33314
30	O30	0.00000	0.14253	0.50000
31	O31	0.08894	0.00000	0.20218